Non-technical Abstract

The primary purpose of this clinical investigation is to assess the safety of a novel, adenoviral vector (so called minimal or gutless vector), termed MiniAdFVIII.

The secondary purpose of this clinical investigation is to determine if gene transfer can be used to cause the production of circulating, functional levels of Factor VIII (FVIII). FVIII is a protein that aids in the clotting of blood that is deficient in patients with severe hemophilia A. Patients who have hemophilia A are currently treated with clotting factors, but most patients receive treatment only for bleeding events and not for prevention of bleeding.

Gene transfer experiments have been carried out in people with various diseases including hemophilia. Some of these studies have used a virus to carry the gene into the patient's cells. One of the viruses used in gene transfer is the adenovirus that, in its natural form, can cause illness such as flu. Importantly, pre-clinical studies performed at several independent laboratories (including our own) have indicated that gutless adenoviral vectors have improved safety and efficacy profiles compared to earlier generation adenoviral vectors which are currently in clinical trails.

The Investigators will determine if MiniAdFVIII can transfer the FVIII gene to produce the FVIII clotting factor in severe hemophilia A patients. MiniAdFVIII has most of the virus DNA removed and replaced with the FVIII gene, a normal gene that is designed to assist the liver cell to make FVIII through gene transfer. The MiniAdFVIII is designed not to multiply and spread in the body. This approach has been previously tested in laboratory animals. The experiments suggested that administration of the MiniAdFVIII could produce circulating, functional levels of FVIII in the blood.